Problem I. Tree Confrontation

Input file:	*standard input*
Output file:	*standard output*
Time limit:	3 seconds
Memory limit:	256 mebibytes

In the ancient times, the country of Barelia had n cities connected by bidirectional roads. Each pair of cities had exactly one simple path between them (that is, the country topology was a tree).

For the longest period of time, there were two opposing wizard factions living in Barelia: white mages and black mages. At every moment of time, each Barelian city could have been occupied by either a white mage or a black mage (it was possible that a city was free from mages of any kind, but no two mages could occupy the same city, even if they belonged to the same faction).

It is known that at all times, exactly a of the cities were occupied by white mages, and exactly b of the cities were occupied by black mages. Also, for each pair of cities occupied by the mages of the same faction, there must have been a path between them such that every city on the path was occupied by the same faction (that is, at all times, the cities occupied by a certain faction formed a connected subtree).

From time to time one of the mages could decide to travel to another city. Suppose that a mage was located at the city v. To travel, he chose a path $P_1, \ldots, P_k$ such that $P_1 = v$, all the cities $P_1, P_2, \ldots, P_{k-1}$ are occupied by the mages of the same faction, and the city P_k is free. After that, the mage moved from the city P_1 to the city P_k (that is, the city P_1 became free, and the city P_k became occupied by a mage of the same faction). Note that after the travel, the cities occupied by the same faction still had to form a connected subtree.

It is historically important to know if some conjectures about the mages' locations contradict. Consider two configurations of mages' locations A and B; we will say that A *does not contradict with* B if A can be transformed to B via a sequence of valid mages' travels. Clearly, the relation "A does not contradict with B" is an equivalence relation; thus all possible configurations can be divided into maximal mutual non-contradictory classes.

In order to estimate the research expenses, the Barelian Historian Society asked you to determine the number of non-contradictory configuration classes.

Input

The first line contains three space-separated integers n, a and b ($1 \le n \le 200\,000$, $1 \le a, b \le n$).

The next $n - 1$ lines contain description of the roads. The i-th line contains two space-separated integers u_i and v_i: the numbers of the cities connected by the i-th road ($1 \le u_i, v_i \le n$). It is guaranteed that the given roads form a tree.

Output

Print the number of non-contradictory configuration classes. Note that, if there are no valid configurations, the answer is 0.

Examples

standard input	standard output
4 1 1 1 2 2 3 3 4	2
5 1 1 1 2 1 3 1 4 1 5	1
5 2 1 1 2 1 3 1 4 1 5	4
5 2 2 1 2 1 3 1 4 1 5	0